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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/416,618	10/12/99	PAASCH	R 10980780-1

022879 MM41/0702  
HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS CO 80527-2400

EXAMINER

STEWART JR, C

ART UNIT

PAPER NUMBER

2853

DATE MAILED:

07/02/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Notice of Allowability

Application No.

09/416,618

Applicant(s)

Robert Paasch

Examiner

Charles Stewart

Art Unit

2853



--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to June 22, 2001

2. ☒ The allowed claim(s) is/are 1-28

3. ☒ The drawings filed on Oct 12, 1999 are acceptable as formal drawings.

4. ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE FOR SUBMITTING NEW FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION.** This three-month period for complying with the REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL is extendable under 37 CFR 1.136(a).

6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

7. ☐ Applicant MUST submit NEW FORMAL DRAWINGS

(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_

(b) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the examiner.

(c) ☐ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No. \_\_\_\_\_

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

## Attachment(s)

1 ☐ Notice of References Cited (PTO-892)

3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

5 ☐ Information Disclosure Statement(s) (PTO-1449), Paper No(s). \_\_\_\_\_

7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

9 ☐ Other

2 ☐ Notice of Informal Patent Application (PTO-152)

4 ☐ Interview Summary (PTO-413), Paper No. \_\_\_\_\_

6 ☐ Examiner's Amendment/Comment

8 ☒ Examiner's Statement of Reasons for Allowance

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*Examiner's Statement of Reasons for Allowance*

1. The application filed June 22, 2001 in view of the primary reason for the allowance of independent claims 1, 10, 17, 23, 26, 27 and 28 are the inclusion of the limitation that pertains to the combination of all other claims. With respect to claim 1, recites an ink well defined proximate said ink expulsion mechanism and a nozzle formed as an egress from said ink well; and a first pressure sensor that is formed substantially at said ink well and configured to detect pressure waves induced by a firing of said ink expulsion mechanism. With respect to independent claim 10, recites a cover plate spaced from said ink expulsion mechanism and having a nozzle formed therein, said nozzle being aligned with said ink expulsion mechanism; and a sensor mechanism formed on said substrate that is capable of detecting signals indicative of when said nozzle is clogged. With respect to independent claim 17, recites attempting expulsion of a volume of ink through a nozzle of a print head; detecting within said print head a firing quality related characteristic of a resultant pressure wave generated by said attempt to expel said volume of ink through said nozzle. With respect to independent claim 23, recites an interdigitated pressure wave transducer disposed on said substrate and having a directional detection characteristic whereby a pressure wave traveling in a predetermined direction from said at least one ink ejector is preferentially detected. With respect to independent claim 26, recited detecting a second magnitude of a pressure wave in the range of 15% to 25% less than said first magnitude whereby a misfiring nozzle may be detected. With respect to independent claim 27, recites establishing a first timing of an arrival of a pressure wave from an ejection of a predetermined volume of ink from a nozzle; and detecting a second timing of an arrival of a pressure wave in the range of 155

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to 20% earlier than said first timing whereby a misfiring nozzle may be detected. With respect to independent claim 28, recites attempting expulsion of a volume of ink from a print head; detecting within said print head a magnitude and timing of a resultant pressure wave generated by said attempt to expel said volume of ink.

2. It is these limitation found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Charles W. Stewart, Jr. whose telephone number is (703) 308-7252. The examiner can normally be reached on Monday-Friday from 8:30 a.m to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barrow, Jr. Art Unit 2853, can be reached on (703) 308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

CWS 

June 29, 2001

  
John Barlow  
Supervisory Patent Examiner  
Technology Center 2800